



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

Publications of the

MEMBERS OF THE SOCIETY.*

Prof. R. G. AITKEN	{ Lick Observatory, Mount Hamilton, Cal.
Dr. SEBASTIAN ALBRECHT.....	{ Lick Observatory, Mount Hamilton, Cal.
Prof. W. STEADMAN ALDIS,* F.R.A.S..	{ Old Headington, Oxford, England.
Prof. W. D. ALEXANDER.....	{ Box 732, Honolulu, Hawaiian Islands.
Miss EDITH W. ALLYNE.....	{ 2609 Gough St., San Francisco, Cal.
Mr. CHARLES ALTSCHUL.....	{ Lazard Frères & Co., 10 Wall St., New York, N. Y.
Dr. G. DEL AMO.....	{ 4 Conde de Aranda, Madrid, Spain.
Mr. W. F. ARMSTRONG.....	{ 1110 Fourteenth Ave., Seattle, Wash.
Mr. J. J. AUBERTIN,* F.R.A.S.....	{ 33 Duke St., St. James, S. W., London, England.
Mr. ALLEN H. BABCOCK.....	146 Lake St., Oakland, Cal.
Mr. E. H. BACON.....	{ 1103 Merchants Exch. Bldg., San Francisco, Cal.
Mr. B. A. BAIRD.....	{ 2241 Post St., San Francisco, Cal.
Mr. EDWIN I. BARNES.....	R. F. D. No. 1, Chanute, Kan.
Mr. GEO. A. BATCHELDER.....	Menlo Park, Cal.
Mr. PAUL M. BENEDICT.....	Box 637, New Haven, Conn.
Mr. EDWIN G. BENKMAN.....	{ 2267 Turk St., San Francisco, Cal.
Mr. JOHN BERMINGHAM*.....	{ 416 Jackson St., San Francisco, Cal.
Mr. CHARLES R. BISHOP.....	{ University Bank Bldg., Berkeley, Cal.
Mr. ANSON STILES BLAKE.....	Berkeley, Cal.
Mrs. CHARLES D. BLANEY.....	{ Stevens Creek Road, San Jose, Cal.
Mr. J. W. BLESSING.....	Risingsun, Ohio.
Mr. HENRY LORD BOULTON, JR.*	{ Carácas, Venezuela, or Box 2015, New York, N. Y.
F.R.A.S.	
Prof. F. P. BRACKETT.....	{ Pomona College, Claremont, Cal.
Mr. J. A. BRASHEAR, F.R.A.S.....	Allegheny City, Pa.
Rev. M. S. BRENNAN.....	{ St. Lawrence's Church, St. Louis, Mo.
Mr. EDWARD M. BREWER.....	27 Kilby St., Boston, Mass.
Mr. CHARLES BURCKHALTER, F.R.A.S..	{ Chabot Observatory, Oakland, Cal.
Miss MARY E. BYRD.....	R. R. 9, Lawrence, Kan.
Dr. J. CALLANDREAU*.....	{ Oradour sur Vayres, Haute Vienne, France.

* A star signifies Life Membership. Total membership, 246 (61 life members).

Prof. W. W. CAMPBELL.....	{	Director Lick Observatory, Mount Hamilton, Cal.
Foreign Assoc. R.A.S.		
Mr. ANDREW CARNEGIE*.....	{	5 West 51st St., New York, N. Y.
Mr. J. C. CEBRIAN*.....	{	1801 Octavia St., San Fran- cisco, Cal.
Mr. A. J. CHAMPREUX.....	{	Students' Observatory, Berke- ley, Cal.
Mr. H. C. CHESEBROUGH.....	{	234 California St., San Fran- cisco, Cal.
CHIEF ASTRONOMER.....	{	Department of Interior, Otta- wa, Canada.
Mr. MATEO CLARK*.....	{	9 New Broad St., E. C., Lon- don, England.
Mr. A. L. COLTON*.....		Box 1148 Madison, Wisconsin.
Major S. COMFORT.....	{	Gare Bedford Petroleum Cie., 67 Boulevard Haussmann, Paris, France.
Mr. FRANK V. CORNISH.....	{	Monadnock Bldg., San Fran- cisco, Cal.
Mr. J. COSTA.....	{	104 Montgomery St., San Fran- cisco, Cal.
Prof. RUSSELL TRACY CRAWFORD.....	{	Students' Observatory, Berke- ley, Cal.
Mr. GEORGE CROCKER*.....		Mills Bldg., New York, N. Y.
Mr. HENRY J. CROCKER.....	{	2301 Laguna St., San Fran- cisco, Cal.
Mr. WILLIAM H. CROCKER*.....	{	Crocker National Bank, San Francisco, Cal.
Mr. CHARLES S. CROSSLAND.....		8 Forsythe St., Chelsea, Mass.
Mrs. W. B. CUNNANE.....	{	1327 De la Vina St., Santa Barbara, Cal.
Miss S. J. CUNNINGHAM.....	{	3308 Arch St., Philadelphia, Pa.
Prof. HEBER D. CURTIS.....		Casilla 1219, Santiago, Chile.
Mr. CHAS. S. CUSHING.....	{	821 First National Bank, San Francisco, Cal.
Mr. J. EWEN DAVIDSON*.....	{	98 Banbury Road, Oxford, England.
Mrs. JOHN H. DEVEREUX.....	{	3226 Euclid Ave., Cleveland, Ohio.
Mr. EDWARD DONOHUE.....	{	Donohoe-Kelly Banking Co., San Francisco, Cal.
Mr. J. A. DONOHUE.....	{	Vice-President Donohoe-Kelly Banking Co., San Francisco, Cal.
Mrs. ANNA PALMER DRAPER*.....	{	271 Madison Ave., New York, N. Y.
Rev. W. ARTHUR DUCKWORTH, J.P....	{	Orchardleigh, Frome, Somer- set, England.
Mr. ERNEST I. DYER.....	{	Rooms 618-619 Mutual Life Bldg., Seattle, Wash.
Miss S. J. EASTMAN.....		Ogontz School, Pa.
Prof. GEORGE C. EDWARDS.....		2546 Dana St., Berkeley, Cal.

Publications of the

Mr. STURLA EINARSSON.....	{ Students' Observatory, Berkeley, Cal.
Mr. FERDINAND ELLERMAN.....	{ Solar Observatory, Mount Wilson, via Pasadena, Cal.
Mrs. JOHN EVERSHERD.....	{ The Observatory, Kodaikanal, South India.
Mr. E. A. FATH.....	{ Lick Observatory, Mount Hamilton, Cal.
Mr. S. WILSON FISHER.....	1502 Pine St., Philadelphia, Pa.
Mr. ANDREW B. FORBES*.....	{ Formerly 401 California St., San Francisco, Cal.
Hon. GEORGE STUART FORBES, F.R.A.S....	{ His Majesty's Indian Civil Service, Madras Club, Madras, India.
Mr. ARTHUR W. FOSTER*.....	{ Flood Building, San Francisco, Cal.
Mr. H. C. FRICK*.....	42 Fifth Ave., Pittsburgh, Pa.
Mr. ROBERT D. FRY*.....	{ 628 Montgomery St., San Francisco, Cal.
Mr. J. D. GALLOWAY.....	1426 Myrtle St., Oakland, Cal.
Miss ELIZABETH E. GARVEY.....	{ Hearst Hall, University of California, Berkeley, Cal.
Mr. OTTO VON GELDERN.....	{ 1978 Broadway, San Francisco, Cal.
Sir DAVID GILL, K.C.B., F.R.A.S.....	{ Athenæum Club, Pall Mall, London, England.
Miss ESTELLE GLANCY.....	{ Lick Observatory, Mount Hamilton, Cal.
Mr. ELWYN B. GOULD.....	{ 808 Juniper St., San Diego, Cal.
Prof. JAMES E. GOULD.....	{ University Station, Seattle, Wash.
Mr. JOSEPH D. GRANT*.....	Burlingame, Cal.
Mr. WM. GRANT.....	{ 601 Merchants Exchange Building, San Francisco, Cal.
Mr. ANDREW GREIG*.....	{ 3 Duntrune Terrace, Broughty Ferry, Dundee, Scotland.
Mr. C. P. GRIMWOOD.....	{ 722 Monadnock Bldg., San Francisco, Cal.
Mr. J. O'B. GUNN.....	{ Mechanics' Savings Bank, 143 Montgomery St., San Francisco, Cal.
Mr. JOHN R. HAAKE.....	{ 308 California St., San Francisco, Cal.
Prof. GEORGE E. HALE*.....	{ Director of the Solar Observatory, Solar Observatory Office, Pasadena, Cal.
Foreign Assoc. R.A.S.	
Mr. C. F. HARMS.....	{ 140 Broad St., New York, N. Y.
Mr. JACKSON HATCH.....	Porter Building, San Jose, Cal.
Mrs. PHEBE A. HEARST.....	{ 1414 Post St., San Francisco, Cal.
Mr. ANDREW P. HENKEL.....	{ Erie and Mooney Aves., Hyde Park, Cincinnati, Ohio.

Astronomical Society of the Pacific. 5

Mr. JAMES A. HENNESY.....	{ 2718 Twelfth St. N. E., Wash- ington, D. C.
Rev. G. HEREDIA, S.J., F.R.A.S.....	{ Colegio del Velódromo, Pu- eblo, Mexico.
Mr. HORACE L. HILL*.....	{ Care of Laidlaw & Co., New York City.
Miss ADELAIDE M. HOBE.....	{ Lick Observatory, Mount Ham- ilton, Cal.
Mr. BEVERLY L. HODGHEAD.....	{ 601 Merchants Exchange Build- ing, San Francisco, Cal.
Mr. SAMUEL V. HOFFMAN,* F.R.A.S...	{ 91 Madison Ave., Morristown, N. J.
Dr. EDWARD S. HOLDEN*..... Foreign Assoc. R.A.S.	{ U. S. Military Academy, West Point, N. Y.
Mr. JOHN D. HOOKER.....	{ 325 West Adams St., Los Angeles, Cal.
Hon. C. WEBB HOWARD*.....	{ Pacific-Union Club, San Fran- cisco, Cal.
Mr. JOHN L. HOWARD.....	{ 340 Steuart St., San Francisco, Cal.
Mr. WM. HOWAT*.....	{ 458 William St., Melbourne, Victoria.
Prof. CHAS. S. HOWE, F.R.A.S.....	{ Case Observatory, Cleveland, Ohio.
Prof. W. J. HUSSEY..... Foreign Assoc. R.A.S.	{ Director Detroit Observatory, Ann Arbor, Michigan.
Mr. EDWARD IRVING.....	{ 1530 Shattuck Ave., Berkeley, Cal.
Mr. FRANK JAYNES.....	{ W. U. Telegraph Co., San Francisco, Cal.
Miss ALICE JOY.....	Campbell, Cal.
Mr. ROBERT JONCKHEERE.....	{ Observatoire Stelle, Roubaix (Nord), France.
Mr. CHARLES C. KEENEY*.....	{ 2220 Clay St., San Francisco, Cal.
Mr. JAMES R. KELLY.....	{ Hibernia Savings and Loan Society, San Francisco, Cal.
Prof. A. E. KENNELLY,* F.R.A.S.....	{ Division of Engineering, Har- vard University, Cambridge, Mass.
Mr. TORVALD KÖHL*.....	Odder, Denmark.
Mr. FR. KOEPPEN.....	{ Schöne Aussicht 20, Wiesba- den, Germany.
Mr. C. F. DE LANDERO*.....	{ P. O. Box 1, Pachuca, State Hidalgo, Mexico.
Mr. JOHN A. LANGSTROTH.....	{ Perry St. and Grand Ave., Oakland, Cal.
Prof. EDGAR L. LARKIN.....	{ Director Mount Lowe Obser- vatory, Echo Mountain, Cal.
Hon. MANUEL FERNANDEZ LEAL.....	{ Casa de Moneda, City of Mexico, Mexico.
Prof. A. O. LEUSCHNER, F.R.A.S.....	{ Director Students' Observa- tory, Berkeley, Cal.
Mr. CLARENCE MACKENZIE LEWIS*...	{ Care Wm. Salomon & Co., 25 Broad St., New York, N. Y.

Mr. ADOLPH LIETZ.....	{ 632 Commercial St., San Francisco, Cal.
Mr. HENRY B. LOOMIS*.....	Seattle, Washington.
Mr. W. H. LOWDEN.....	{ 314 California St., San Francisco, Cal.
Mr. EDWARD G. LUKENS.....	1362 Jackson St., Oakland, Cal.
Hon. GEO. RUSSELL LUKENS.....	1350 Madison St., Oakland, Cal.
Dr. JAMES D. MADDRILL, F.R.A.S.....	{ International Latitude Observatory, Ukiah, Cal.
Mr. MARSDEN MANSON, C.E., PH.D....	{ Room 801, 4 Montgomery St., San Francisco, Cal.
Mr. F. MARTENS.....	{ Collegepoint, Queens Co., New York.
Mr. JOHN MARTIN.....	{ Puruatanga, Martinborough, Wairarapa, Wellington, New Zealand.
Mr. W. H. MAW,* F.R.A.S.....	{ 18 Addison Road, Kensington, London, England.
Prof. A. G. McADIE.....	{ U. S. Weather Bureau, San Francisco, Cal.
Mr. GARRET W. McENERNEY.....	{ 1277 Flood Bldg., San Francisco, Cal.
Prof. T. E. McKINNEY.....	{ Wesleyan University, Middletown, Conn.
Prof. MALCOLM McNEILL.....	Lake Forest, Ill.
Mr. W. F. MEYER.....	{ Students' Observatory, Berkeley, Cal.
Mr. J. WALTER MILES.....	Irwin, Pa.
Prof. E. MILLER.....	{ University of Kansas, Lawrence, Kansas.
Hon. D. O. MILLS*.....	15 Broad St., New York, N. Y.
Mr. JAMES K. MOFFITT.....	{ First National Bank, San Francisco, Cal.
Mr. E. J. MOLERA,* C.E.....	{ 2025 Sacramento St., San Francisco, Cal.
Mr. W. H. S. MONCK, F.R.A.S.....	{ 16 Earlsfort Terrace, Dublin, Ireland.
Dr. J. H. MOORE.....	{ Lick Observatory, Mount Hamilton, Cal.
Mr. FREMONT MORSE, U.S.C. & G.SURVEY	{ 1691 Bush St., San Francisco, Cal.
Mr. C. A. MURDOCK.....	{ 2393 Filbert St., San Francisco, Cal.
Hon. B. D. MURPHY*.....	{ Formerly 530 California St., San Francisco, Cal.
Mr. CHARLES NELSON.....	{ 144 Steuart St., San Francisco, Cal.
Mr. H. F. NEWALL,* F.R.A.S.....	{ Observatory of the University, Cambridge, England.
Dr. B. L. NEWKIRK.....	{ University of Minnesota, Minneapolis, Minn.
Mr. P. NOORDHOFF.....	Groeningen, Holland.
Miss ROSE O'HALLORAN.....	{ 726 Ashbury St., San Francisco, Cal.

Astronomical Society of the Pacific. 7

Mr. W. S. OWEN.....	{ U. S. Examiner of Surveys, Imperial, Cal.
Mr. GEORGE FREDERICK PADDOCK.....	Casilla 1219, Santiago, Chile.
Hon. GEORGE C. PARDEE.....	Oakland, Cal.
Mr. JOHN PATTEN*.....	{ 325 E. 97th St., New York, N. Y.
Hon. GEO. C. PERKINS*.....	Oakland, Cal.
Prof. C. D. PERRINE..... Foreign Assoc. R.A.S.	{ Lick Observatory, Mount Ham- ilton, Cal.
Hon. JAMES D. PHELAN.....	{ Mutual Savings Bank Bldg., San Francisco, Cal.
Mr. HENRY PHIPPS, JR.*.....	{ Carnegie, Phipps & Co., Pitts- burgh, Pa.
Mr. LAWRENCE H. PIERSON.....	{ Pacific Pine Co., San Francisco, Cal.
Mr. RUTHVEN W. PIKE*.....	{ 5037 Madison Ave., Chicago, Illinois.
Dr. THOS. PORTER.....	{ Petersham, New South Wales, Australia.
Miss JULIET PORTER*.....	37 Deane St., Worcester, Mass.
Mr. CHARLES A. POST, F.R.A.S.....	Bayport, Long Island, N. Y.
Mr. WALTER A. POST, F.R.A.S.....	Newport News, Virginia.
Mr. CARL RAMUS.....	{ Ass't Surgeon U. S. Marine Hospital, San Francisco, Cal.
Rev. J. L. RICARD, S.J.....	Santa Clara, Cal.
Mr. DANIEL S. RICHARDSON.....	{ 2525 Hearst Ave., Berkeley, Cal.
Mrs. ISAAC ROBERTS, D. SC.....	{ Chateau Rosa Bonheur. By Thomery, Seine et Marne, France.
Mrs. ARTHUR RODGERS*.....	{ Formerly of Leavenworth and Vallejo Sts., San Francisco, Cal.
The EARL OF ROSSE, F.R.A.S.....	{ Birr Castle, Parsonstown, Ire- land.
Baron ALBERT VON ROTHSCHILD*.....	Vienna, Austria.
Mr. W. P. RUSSELL.....	{ Pomona College, Claremont, Cal.
Mr. E. J. DE SABLA, JR.*.....	{ 1916 Octavia St., San Fran- cisco, Cal.
Mr. MORGAN SANDERS.....	{ 1419 West Lanvale St., Balti- more, Md.
Prof. J. M. SCHAEBERLE*.....	{ 502 Second St., Ann Arbor, Mich.
Mr. JACOB H. SCHIFF*.....	{ 932 Fifth Ave., New York, N. Y.
Mrs. E. T. SCHILD.....	{ 1908 Broadway, San Francisco, Cal.
Mr. HERMAN SCHUSSLER.....	{ Pacific-Union Club, San Fran- cisco, Cal.
Prof. FREDERICK H. SEARÉS.....	{ Director Laws Observatory, Columbia, Mo.
Rev. GEORGE M. SEARLE, C.S.P.....	{ St. Paul's Church, 415 W. 59th St., New York, N. Y.

Dr. T. J. J. SEE,* F.R.A.S.....	{ Naval Observatory, Mare Isl- and, Cal.
Mr. CHARLES S. SMITH*.....	{ 25 W. 47th St., New York, N. Y.
Mr. ELLIOTT SMITH.....	{ Cincinnati Observatory, Sta- tion O, Cincinnati, Ohio.
Mr. E. C. SMITH*.....	{ Saint Albans, Vermont.
Mr. SOMMERS N. SMITH.....	{ The Neafie & Levy Ship and Engine Building Co., Phila- delphia, Pa.
Mr. WM. H. SMYTH.....	{ Fernwald, Berkeley, Cal.
Prof. M. B. SNYDER, F.R.A.S.....	{ Director of Philadelphia Ob- servatory, Philadelphia, Pa.
Mr. GEORGE W. SPENCER.....	{ Care of Ætna Insurance Co., 5 California St., San Fran- cisco, Cal.
Mr. A. B. SPRECKELS*.....	{ 58 Clay St., San Francisco, Cal.
Mr. C. A. SPRECKELS*.....	{ 138 Front St., New York, N. Y.
Mrs. C. A. SPRECKELS*.....	{ San Mateo, Cal.
Mr. RUDOLPH SPRECKELS	{ 1400 Pacific Ave., San Fran- cisco, Cal.
Miss GERTRUDE STANFORD.....	{ Warm Springs, Alameda Co., Cal.
Mr. THOS. W. STANFORD*.....	{ 142 Russell St., Melbourne, Victoria.
Mr. C. M. ST. JOHN.....	{ U. S. Custom House, San Francisco, Cal.
Mr. JULIUS STONE*.....	{ Care of the Ohio Central Fuel Co., Columbus, Ohio.
Mr. V. STRÓYBERG*.....	{ Solvgade 90-4-Copenhagen-K, Denmark.
Mr. DANIEL SUTER.....	{ 317 Bush St., San Francisco, Cal.
Mr. C. F. A. TALBOT.....	{ 300 Central Park West, New York, N. Y.
Mrs. LOUIS TAUSSIG.....	{ 2127 California St., San Fran- cisco, Cal.
Dr. OTTO TETENS.....	{ Royal Observatory, Kiel, Ger- many.
Mr. CURTIS H. THOMAS.....	{ Traer, Ia.
Dr. SIDNEY D. TOWNLEY.....	{ Stanford University, Cal.
Dr. A. S. TUCHLER.....	{ 703 Van Ness Ave., San Fran- cisco, Cal.
Prof. R. H. TUCKER.....	{ Lick Observatory, Mount Ham- ilton, Cal.
Dr. ARTHUR B. TURNER.....	{ Montclair, N. J.
Mr. HENRY J. TURNER*.....	{ Woodville, Rappahannock Co., Virginia.
Major OMAR A. TURNEY.....	{ 16 North Second Ave., Phœnix, Arizona.
Mr. R. J. TYSON*.....	{ Seaboard Bank, 24 Market St., San Francisco, Cal.

Mr. FELIPE VALLE.....	{	Director National Observa- tory, Tacubaya, Mexico.
Mr. EDWARD H. VAN INGEN.....	{	9 East 71st St., New York, N. Y.
Mr. F. W. VAN SICKLEN.....	{	1831 Central Ave., Alameda, Cal.
Dr. W. VILLIGER.....	{	Care of Carl Zeiss; z. Hd. Dr. M. von Rohr, Jena, Germany.
Mr. W. R. WARNER, F.R.A.S.....	{	Care of Warner & Swasey, East Prospect St., Cleveland, Ohio.
Mr. G. T. WEBSTER.....		Box 782, Globe, Arizona.
Prof. Dr. L. WEINEK.....	{	Imperial Observatory, Prague, Austro-Hungary.
Mr. C. A. G. WEYMOUTH.....		2325 Blake St., Berkeley, Cal.
Dr. ANDREW D. WHITE*.....		Ithaca, N. Y.
Mrs. ELSIE HADLEY WHITE.....	{	209 West Park Ave., Valley City, North Dakota.
Mrs. MARY H. WILLMARTH*.....	{	222 Michigan Ave., Chicago, Ill.
Colonel B. WITKOVSKY*.....	{	St. Petersburg, W. O. 9th line, 44, Russia.
Mr. FREDERICK W. ZEILE*.....	{	1818 California St., San Fran- cisco, Cal.
Mr. F. R. ZIEL.....	{	923 Merchants Exchange Bldg., San Francisco, Cal.

INSTITUTIONAL MEMBERS.

FIELD MEMORIAL OBSERVATORY.....	{	Williams College, Williams- town, Mass.
IMPERIAL OBSERVATORY	{	University of St. Petersburg, Russia.
ASTRONOMICAL AND PHYSICAL OBSER- VATORY	{	Taschkent, Turkestan, Russia.
CALIFORNIA STATE LIBRARY.....		Sacramento, Cal.
DANIEL SCHOOL OBSERVATORY.....	{	Franklin and Marshall Col- lege, Lancaster, Pa.
LIBRARY OF THE CHABOT OBSERVATORY		Oakland, Cal.
FREE PUBLIC LIBRARY.....		Worcester, Mass.
THE JOHN CRERAR LIBRARY.....		Chicago, Ill.
LIBRARY OF THE LELAND STANFORD JR. UNIVERSITY	{	Stanford University, Cal.
LIBRARY OF THE LICK OBSERVATORY...		Mount Hamilton, Cal.
LIBRARY OF THE MECHANICS' INSTITUTE	{	99 Grove St., San Francisco, Cal.
LIBRARY OF THE MINNEAPOLIS ATHE- NÆUM	{	Minneapolis, Minn.
NEW YORK PUBLIC LIBRARY.....	{	40 Lafayette Place, New York, N. Y.
OAKLAND FREE PUBLIC LIBRARY.....		Oakland, Cal.
LIBRARY OF PRINCETON UNIVERSITY....		Princeton, N. J.
THE PUBLIC LIBRARY.....		Boston, Mass.
SEATTLE PUBLIC LIBRARY.....		Seattle, Wash.

Publications of the

LIBRARY OF ST. IGNATIUS COLLEGE....	{ 2211 Hayes St., San Francisco, Cal.
SWARTHMORE COLLEGE LIBRARY.....	Swarthmore, Pa.
LIBRARY OF THE U. S. MILITARY ACADEMY	{ West Point, N. Y.
LIBRARY OF THE UNIVERSITY OF CALI- FORNIA	{ Berkeley, Cal.
LIBRARY OF THE UNIVERSITY OF ILLI- NOIS	{ University Station, Urbana, Ill.
LIBRARY OF THE UNIVERSITY OF IN- DIANA	{ Bloomington, Indiana.
LIBRARY OF THE UNIVERSITY OF PENN- SYLVANIA	{ Philadelphia, Pa.
LIBRARY OF THE UNIVERSITY OF SOFIA.	Sofia, Bulgaria, Europe.
WELLESLEY COLLEGE LIBRARY	Wellesley, Mass.
LIBRARY OF YALE UNIVERSITY.....	New Haven, Conn.
LOWELL OBSERVATORY	Flagstaff, Ariz.
SHATTUCK OBSERVATORY	{ Dartmouth College, Hanover, N. H.

CORRESPONDING INSTITUTIONS.

Albany, New York, Dudley Observatory.
 Allegheny, Pennsylvania, Allegheny Observatory.
 Armagh, Ireland, Armagh Observatory.
 Bamberg, Germany, Remeis-Sternwarte.
 Berlin, Germany, Königl. Astronomisches Recheninstitut.
 Berlin, Germany, Königliche Sternwarte.
 Brussels, Belgium, Bibliothèque de la Société Belge d'Astronomie,
 27 Montagne de la Cour.
 Brussels, Belgium, Observatoire Royal de Belgique.
 Cambridge, England, University Observatory.
 Cambridge, Massachusetts, Harvard College Observatory.
 Cape Town, Africa, Royal Observatory.
 Catania, Italy, Società degli Spettroscopisti Italiani.
 Christiania, Norway, Universitæts-Sternwarte.
 Cincinnati, Ohio, Cincinnati Observatory, Station O.
 Columbia, Missouri, Laws Observatory, University of Missouri.
 Cordoba, Argentine Republic, National Observatory.
 Dorpat, Russia, University Observatory.
 Dublin, Ireland, Dunsink Observatory.
 Dublin, Ireland, Royal Dublin Society.
 Edinburgh, Scotland, Royal Observatory.
 Geneva, Switzerland, Observatoire.
 Glasgow, Scotland, University Observatory.
 Gotha, Germany, Grossherzogliche Sternwarte.
 Goettingen, Germany, Königliche Sternwarte.
 Greenwich, England, Royal Observatory.
 Hamburg, Germany, Hamburger Sternwarte.
 Heidelberg, Germany, Astrometrische Abteilung der Grossherzoglichen
 Sternwarte.

Heidelberg, Germany, Astrophysikalische Abteilung der Grossherzoglichen Sternwarte.
Helsingfors, Russia, University Observatory.
Hiram, Ohio, Observatory of Hiram College.
Kasan, Russia, University Astronomical Observatory.
Kiel, Germany, Universitäts-Sternwarte.
Kodaikanal, Palani Hills, South India, Observatory.
Koenigsberg, in Pr. Germany, Königliche Sternwarte.
La Plata, Argentine Republic, Observatory.
Leipsic, Germany, Universitäts-Sternwarte.
Leyden, Holland, Universitäts-Sternwarte.
Lisbon (Tapada), Portugal, Real Observatorio.
London, England, British Astronomical Association, care of F. W. Levander, 30 North Villas, Camden Square, N. W.
London, England, British Museum.
London, England, Royal Astronomical Society.
London, England, 3 Verulam Bldgs., Gray's Inn, The Nautical Almanac.
Lund, Sweden, University Observatory.
Madison, Wisconsin, Washburn Observatory.
Madrid, Spain, Observatorio Astronómico.
Marseilles, France, Observatoire.
Melbourne, Victoria, Observatory.
Mexico, Mexico, Sociedad Científica "Antonio Alzate."
Milan, Italy, Osservatorio Astronomico di Brera.
Moscow, Russia, University Observatory.
Mount Wilson, via Pasadena, Cal., Solar Observatory.
Munich, Germany, Königliche Sternwarte.
Naples, Italy, Osservatorio Astronomico.
New Haven, Connecticut, Yale University Observatory.
New York, New York, American Mathematical Society.
New York, New York, Columbia University Observatory.
Nice, France, Observatoire.
Northfield, Minnesota, Goodsell Observatory.
Oxford, England, Radcliffe Observatory.
Oxford, England, University Observatory.
Padua, Italy, Osservatorio Astronomico.
Paris, France, Bureau des Longitudes.
Paris, France, Observatoire National.
Paris, France, Rue Cassini 16, Société Astronomique de France.
Philadelphia, Pa., 105 South Fifth St., American Philosophical Society.
Potsdam, Germany, Astrophysikalisches Observatorium.
Prague, Austro-Hungary, Universitäts-Sternwarte.
Pulkowa, Russia, Imperial Observatory.
Rio de Janeiro, Brazil, Observatory.
Rome, Italy, Osservatorio Astronomico del Collegio Romano.
Rome, Italy, Specula Vaticana.
San Francisco, California Academy of Sciences.
San Francisco, California, Technical Society of the Pacific Coast.
Stockholm, Sweden, University Observatory.

Strassburg, Germany, Universitäts-Sternwarte.
 Sydney, New South Wales, Observatory.
 Tacubaya, Mexico, Observatorio Astronomico Nacional.
 Tokio, Japan, University Observatory.
 Toronto, Canada, Astronomical and Physical Society of Toronto.
 Toulouse, France, Observatoire.
 Turin, Italy, Osservatorio Astronomico.
 University Park, Colorado, Chamberlin Observatory.
 University of Virginia, Virginia, McCormick Observatory.
 Upper Darby, Pennsylvania, Flower Observatory, University of Pennsylvania.
 Upsala, Sweden, University Observatory.
 Vienna, Austria, K. K. Sternwarte.
 Vienna (Ottakring), Austria, Von Kuffnersche Sternwarte.
 Washington, District of Columbia, Library of Congress, Periodical Division.
 Washington, District of Columbia, National Academy of Sciences.
 Washington, District of Columbia, Naval Observatory.
 Washington, District of Columbia, Smithsonian Institution.
 Washington, District of Columbia, The American Ephemeris.
 Washington, District of Columbia, U. S. Coast and Geodetic Survey.
 Williams Bay, Wisconsin, Yerkes Observatory.
 Zurich, Switzerland, Observatory.

EXCHANGES.

Astrophysical Journal, Williams Bay, Wisconsin.
Popular Astronomy, Northfield, Minn.
 Prof. Dr. H. J. Klein, Editor of *Sirius*, Theresien St. 85, Köln-Lindenthal, Germany.
The Observatory, Greenwich, England.
The Journal of the Royal Astronomical Society of Canada, Toronto, Canada.
Revista di Astronomia, Società Astronomica Italiana, Turin, Italy.
 Società Astronomica, Italiana, Turin, Italy.
 Royal Astronomical Society of Canada, Toronto, Canada.

FOR REVIEW.

[See *Publications A. S. P.*, Vol. VIII, p. 101.]

The Call, San Francisco, California.
The Chronicle, San Francisco, California.
The Examiner, San Francisco, California.
The Mercury, San Jose, California.
The Record-Union, Sacramento, California.
The Times, Los Angeles, California.
The Tribune, Oakland, California.